

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended): A spatialization system for at least one sound source creating for each source two spatialized monophonic channels (L, R) designed to be received by a listener, comprising:

a filter database comprising a set of head-related transfer functions specific to the listener,

a data presentation processor receiving the information from each source and comprising in particular a module for computing the relative positions of the sources in relation to the listener,

a head-related transfer functions selection module with a variable resolution suited to the relative position of the source in relation to the listener,

~~a unit for computing said monophonic channels by convolution of each sound source with head-related transfer functions of said database estimated at said source position,~~

~~wherein said data presentation processor comprises a head-related transfer function selection module with a variable resolution suited to the relative position of the source in relation to the listener~~
a computation unit for computing said monophonic channels by convolution of each sound source with head-related transfer functions of said database estimated at said source position, without a spatial interpolation of the head-related transfer functions.

2. (Previously Presented): The spatialization system as claimed in claim 1, wherein the head-related transfer functions included in the database are collected at 7° intervals in azimuth, from 0 to 360°, and at 10° intervals in elevation, from -70° to +90°.

3. (Previously Presented): The spatialization system as claimed in claim 1, wherein the number of coefficients of each head-related transfer function is approximately 40.

4. (Previously Presented): The spatialization system as claimed in claim 1, wherein it comprising a sound database including in digital form a monophonic sound signal characteristic of each source to be spatialized, this sound signal being designed to be convoluted with the selected head-related transfer functions.
5. (Previously Presented): The sound spatialization system as claimed in claim 4, wherein the data presentation processor comprises a sound selection module linked to the sound database prioritizing between the concomitant sound sources to be spatialized.
6. (Previously Presented): The sound spatialization system as claimed in claim 5, wherein the data presentation processor comprises a configuration and programming module to which is linked the sound selection module and in which are stored customization criteria specific to the listener.
7. (Previously Presented): The spatialization system as claimed in claim 1, wherein it comprises an input/output audio conditioning module which retrieves at the output the spatialized monophonic channels to format them before sending them to the listener.
8. (Previously Presented): The spatialization system as claimed in claim 7, wherein since live communications have to be spatialized, these communications are formatted by the conditioning module so they can be spatialized by the computation unit.
9. (Previously Presented): The sound spatialization system as claimed in claim 1, wherein the computation unit comprises a processor interface linked with the data presentation unit and a computer for generating spatialized monophonic channels.
10. (Previously Presented): The sound spatialization system as claimed in claim 9, wherein since the system comprises a sound database, the processor interface comprises buffer registers for the transfer functions from the filter database and the sounds from the sound database.

11. (Previously Presented): The spatialization system as claimed in claim 9, wherein the computer is implemented by an EPLD type programmable component.
12. (Previously Presented): The spatialization system as claimed in claim 10, wherein the computer comprises a source activation and selection module, performing the mixing function between live communications and the sounds from the sound database.
13. (Previously Presented): The spatialization system as claimed in claim 9, wherein the computer comprises a dual spatialization module which receives the appropriate transfer functions and performs the convolution with the monophonic signal to be spatialized.
14. (Previously Presented): The spatialization system as claimed in claim 9, wherein the computer comprises a soft switching module implemented by a dual linear weighting ramp.
15. (Previously Presented): The spatialization system as claimed in claim 9, wherein the computer comprises an atmospheric absorption simulation module.
16. (Previously Presented): The spatialization system as claimed in claim 9, wherein the computer comprises a dynamic range weighting module and a summation module to obtain the weighted sum of the channels of each track and provide a single stereophonic signal compatible with the output dynamic range.
17. (Previously Presented): An integrated modular avionics system comprising a high speed bus to which is connected the sound spatialization system as claimed in claim 1 via the data presentation processor.
18. (Original): The spatialization system as claimed in claim 11, wherein the computer comprises a source activation and selection module, performing the mixing function between live communications and the sounds from the sound database.

19. (Original): The spatialization system as claimed in claim 10, wherein the computer comprises a dual spatialization module which receives the appropriate transfer functions and performs the convolution with the monophonic signal to be spatialized.

20. (Original): The spatialization system as claimed in claim 10, wherein the computer comprises an atmospheric absorption simulation module.